

# I. PATENT ABSTRACTS OF JAPAN

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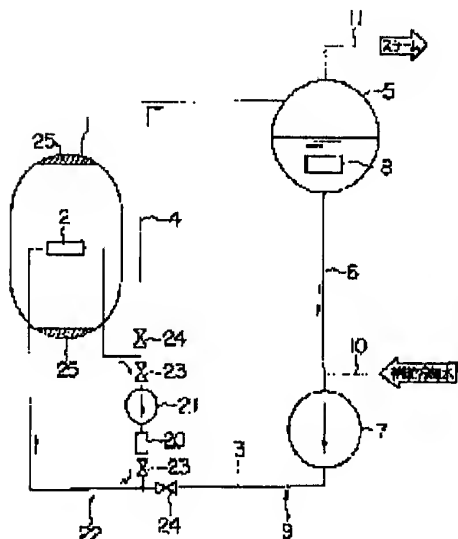
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## (54) FUEL CELL TYPE GENERATOR

(57)Abstract:

PURPOSE: To reduce the operation cost at the time of preventing freezing of the electrolyte of a fuel cell when the operation of a fuel cell type generator is stopped.

CONSTITUTION: Heating means 25, 25 are provided on both end parts of a fuel cell 1, and a bypass piping 20 is provided on a feeding piping 3 and a drain piping 4 to a cooler 2 in the fuel cell 1. A small pump 21 is provided in the bypass piping 20, to circulate cooling water to a small circulation route 22 including the cooler 2 and the bypass piping 20, when the operation of the device is stopped. The cooling water circulated in the small circulation route 22 by the driving power of a small pump 21, is heated by the heating means 25, 15, and is circulated, and the fuel cell 1 is equally heated through the cooler 2. Since the amount of the cooling water retained in the small circulation route 22 is small, the heating thereof can be restricted to a small level, and the operation cost can thus be reduced.



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